

ABSTRACT

A radio communication apparatus at a transmission side that includes a plurality of transmission antennas and performs a communication using at least one carrier. The radio communication apparatus includes a channel dividing unit configured to divide a transmission signal into a plurality of channels based on channel structure information returned from another radio communication apparatus at a reception side and indicating a structure of a space-division-multiplexing-channel and a space-time-coding channel between transmission and reception antennas, and a space-time-coding unit configured to realize transmission diversity by performing a space-time-coding processing for each of the plurality of channels.